Subject: Re: Why float is called as 'float', not 'real'?
Posted by James Kuyper on Sat, 24 Mar 2007 11:56:18 GMT
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DirtyHarry wrote:
> Good day everyone. This sounds like a stupid question, but I became
> just curious yesterday, and I looked up several textbooks. However, no
> textbooks on computer language (that I have ) mentioned this. So I am
> asking to you, gurus...
>
> We call real numbers as real in mathematics, but we call them as
> 'floating point' in computer science, especially almost all computer
> languages.

One of the earliest computer languages was Fortran, and it uses "REAL". I've learned a couple of dozen computer languages in my life time, but right now I'm having trouble remembering what any of them called their floating point type except for Fortran, C, and C++.

> Is there any particular reason to call 'float' instead of 'real'?

Real numbers are a mathematical concept. Floating point refers to a particular limited way of representing real numbers. It's limited because:

1) It can only directly represent rational numbers
2) The non-zero numbers it can represent have a minimum size.
3) The finite numbers it can represent have a maximum size.
4) The numbers it can represent have a maximum number of significant bits.

It's named in contrast with "fixed point", where there's a fixed maximum number of digits before and after the decimal point.There are also several other ways to approximately represent real numbers, including storing seperate numerators and denominators.